

We Claim:

1. A bladder for an article of footwear comprising:
a sealed first chamber being formed of a barrier material and containing a fluid at a first fluid pressure;
a sealed second chamber formed of a second barrier material containing an inflation fluid at a second fluid pressure that is greater than said first fluid pressure, and said second chamber being operatively coupled to said first chamber such that said inflation fluid from said second chamber moves into said first chamber as it leaves said second chamber to increase the fluid pressure and the amount of fluid within said first chamber.

2. The bladder of claim 1, wherein said fluid contained in said first chamber includes a gas and said first chamber surrounds at least a portion of said second chamber.

3. The bladder of claim 2, wherein said inflation fluid includes an inflation gas and said second chamber is formed of a barrier material that is different from the barrier material of said first chamber.

4. The bladder of claim 3, wherein said barrier material of said second chamber is constructed so that said inflation gas diffuses out of said second chamber and into said first chamber over a predetermined period of time.

5. The bladder of claim 3, wherein said second chamber releases gas to said first chamber by fatigue failure of said second chamber barrier material.

6. The bladder of claim 5, wherein said second chamber barrier material is more brittle than said first chamber barrier material.

7. The bladder of claim 5, wherein said second chamber comprises a preformed material weakness.
8. The bladder of claim 3, wherein said second chamber releases said inflation fluid to said first chamber by manual actuation of said second chamber.
9. The bladder of claim 8, further comprising a valve in said second chamber and a valve actuator.
10. The bladder of claim 8, further comprising a puncturing structure adjacent said second chamber for manually puncturing said second chamber to release inflation gas to said first chamber.
11. The bladder according to claim 4 wherein only a portion of said inflation gas is released into said first chamber.
12. The bladder according to claim 3 wherein said inflation gas includes nitrogen.
13. The bladder according to claim 1 wherein one of said chambers includes a gas filled member.
14. The bladder according to claim 13 wherein said gas filled member includes a barrier material that ruptures in response to an application of a predetermined pressure.
15. The bladder according to claim 14 wherein a fluid pressure within said gas filled member is greater than said second fluid pressure.
16. The bladder according to claim 1 wherein said second chamber includes a plurality of fluid channels.
17. The bladder according to claim 16 wherein each of said fluid channels includes a fluid inlet port adjacent a fluid inlet port of another one of said second chambers.

18. An article of footwear comprising:

an upper for covering at least a portion of a foot of a wearer;

a sole unit attached to said upper and including a shock absorbing system, said shock absorbing system comprising:

a bladder comprising a sealed first chamber formed of a first barrier material and containing a gas at a first fluid pressure, and a sealed second chamber formed of a second barrier material and containing a gas at a second fluid pressure that is greater than said first fluid pressure, said second chamber operatively coupled to said first chamber to release gas from said second chamber to said first chamber to replenish said first chamber with gas.

19. The article of footwear of claim 18, wherein said first chamber surrounds at least a portion of said second chamber.

20. The article of footwear of claim 19, wherein said second barrier material is different from said first barrier material.

21. The article of footwear of claim 20, wherein said second chamber releases gas to said first chamber by diffusion of the gas through said second chamber barrier material over time.

22. The article of footwear of claim 21, wherein said second chamber releases gas to said first chamber by fatigue failure of said second chamber barrier material.

23. The article of footwear of claim 22, wherein said second chamber barrier material is more brittle than said first chamber barrier material.

24. The article of footwear of claim 20, wherein said second chamber comprises a preformed material weakness.

25. The article of footwear of claim 19, wherein said second chamber releases gas to said first chamber by manual actuation of said second chamber.

26. The article of footwear of claim 25, further comprising a one way valve in said second chamber and a valve actuator.

27. The article of footwear of claim 25, further comprising a puncturing structure adjacent said second chamber for manually puncturing said second chamber to release gas to said first chamber.

28. The article of footwear of claim 25, wherein said second chamber includes a plurality of fluid channels extending along a portion of said sole unit.

29. An inflatable bladder for an article of footwear comprising:

a sealed first chamber formed of a barrier material and containing a gas at a first pressure;

a sealed second chamber formed of a barrier material and containing a gas at a second pressure that is greater than said first pressure, said second chamber being operatively coupled to said first chamber so that the gas from the second chamber is released into said first chamber to replenish said first chamber with gas when the barrier material of said second chamber experiences fatigue failure.

30. The inflatable bladder of claim 29, wherein said second chamber barrier material is more brittle than said first chamber barrier material and fails under a predetermined range of repeated loads to replenish said first chamber with gas.

31. The inflatable bladder of claim 29, wherein said second chamber comprises a preformed material weakness which fails under a predetermined range of repeated loads to replenish said first chamber with gas.

32. An article of footwear comprising:

an upper for covering at least a portion of a foot of a wearer;

a sole unit attached to said upper and including a shock absorbing system, said shock absorbing system comprising:

a bladder having a sealed first chamber formed of a barrier material and containing a gas at a first pressure; a sealed second chamber formed of a barrier material and containing a gas at a second pressure that is greater than said first pressure, said second chamber being operatively coupled to said first chamber so that the gas from the second chamber is released into said first chamber to replenish said first chamber with gas when the barrier material of said second chamber experiences fatigue failure.

33. The article of footwear of claim 32, wherein said second chamber barrier material is more brittle than said first chamber barrier material and fails under a predetermined range of repeated loads to replenish said first chamber with gas.

34. The article of footwear of claim 32, wherein said second chamber comprises a preformed material weakness which fails under a predetermined range of repeated loads to replenish said first chamber with gas.